

Commit to Quality Endoscopy: The Link between Practice and Care

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1. Why QI?

a. Objective measures to define high- quality endoscopic services

i. Anticipate that reimbursement for endoscopy will soon be linked to performance (proactive stance)

1. Cannot leave the standards-setting to an administrative or regulatory agency without endoscopy experience

2. Task Force on Quality in Endoscopy

a. American Society for

Gastrointestinal Endoscopy (ASGE) and American College of Gastroenterology (ACG)

b. "Quality Indicators for

Gastrointestinal Endoscopic Procedures: An Introduction"

c. "Quality Indicators for

Colonoscopy", 2006

i. www.acg.gi.org/media/asg

[ejoint/QualityColonoscopy.pdf](http://www.acg.gi.org/media/asgejoint/QualityColonoscopy.pdf)

d. "Quality Indicators for

Esophagogastroduodenoscopy"

e. "Quality Indicators for Endoscopic

Retrograde Cholangiopancreatography"

f. "Quality Indicators for Endoscopic

Ultrasonography"

i. Three time periods:

preprocedure, intraprocedure and postprocedure

ii. Quality indicators were

identified using published data. When data was absent, indicators were chosen based on expert consensus.

b. THE SMOKING GUN: Polyp detection rates NEJM 2010

i. "The adenoma detection rate is an independent predictor of the risk of interval colorectal cancer after screening colonoscopy."

ii. 42 interval colorectal cancers were identified during a period of 188,788 person-years.

Why QI?

~Butt Meddler

(The Carpenters: "Close to You")

Why QI in our endo suite?

We're on time,

We dress neat

*Just trust me, you need to
be*

Quality.

1. The endoscopist's rate of detection of adenomas was significantly associated with the risk of interval colorectal cancer (P=0.008)
 - a. The hazard ratios for adenoma detection rates of less than 11.0%, 11.0 to 14.9%, and 15.0 to 19.9%, as compared with a rate of 20.0% or higher, were 10.94 (95% confidence interval [CI], 1.37 to 87.01), 10.75 (95% CI, 1.36 to 85.06), and 12.50 (95% CI, 1.51 to 103.43), respectively (P=0.02 for all comparisons).
 2. Rate of cecal intubation was not significantly associated with this risk (P=0.50).
2. Pre-procedure factors in quality colonoscopy
 - a. Indications for procedure
 - i. Patient selection: at what age do we discontinue 'screening'
 1. Burke Am J Gastro 2003- Never stop
 2. US Preventative Services Task Force (USPSTF) 2008: routine colorectal cancer screenings can be stopped in patients over the age of 75.
 - a. The results are based on patients who began screenings at age 50 and have had consistently negative screenings up to the age of 75.
 - i. <http://www.uspreventiveservicestaskforce.org/uspstf/uspstf/spscolo.htm>
 - b. Prep selection
 - i. Split prep recommended by ACG 2009
 1. Recommendation to split the dose of bowel preps
 - a. "When all of the bowel preparation is given on the day before examination and the interval between the last dose of preparation and the performance of colonoscopy is prolonged, the probability of poor preparation increased dramatically, particularly in the cecum and ascending colon,"
 2. half of the bowel prep prescription the night before the colonoscopy, and the other half the day of the procedure
 - a. patients can ingest clear liquids until two hours before sedation, according to guidelines of the American Society of Anesthesiologists
 - ii. Document prep adequacy in all procedures, compare with associates
 - c. Time of procedure
 - i. *Time of day and operator fatigue*
 1. Colonoscopy completion rates declined with successive procedures; completion for 1st to 3rd procedures (90%) was significantly higher than for 4th and subsequent procedures (76%) (P = 0.03).

2. Median insertion times lengthened; times for 1st to 4th procedures [8 min, interquartile range (IQR) 6-11 min] were shorter than for 5th and subsequent procedures (10 min, IQR 7-15 min) (P = 0.06).
 3. Lesion detection rates, withdrawal times, and EGD duration remained stable with procedure order.
3. Intra-procedure factors in quality colonoscopy
 - a. Impact of withdrawal time on polyp detection rate
 - i. Among healthy asymptomatic patients undergoing screening colonoscopy, adenomas should be detected in >25% of men and >15% women more than 50 years old.
 - ii. studies have demonstrated increased detection of significant neoplastic lesions in colonoscopic examinations where the withdrawal time is 6 minutes or more. Mean withdrawal time should be >6 minutes in colonoscopies with normal results performed in patients with intact colons. (2C)
 1. "Application of this standard to an individual case is not appropriate because colons differ in length and in some instances a very well prepared colon of relatively short length and with nonprominent haustral markings can be carefully examined in less than 6 minutes. Further, recent evidence suggests that colonoscopies with a wide angle of view allow quicker examination without increasing miss rates for polyps."
 - iii. Withdrawal time tools: gong every 2 minutes, videodocumentation with awareness (AJG 2010)
 1. Videorecorded routine colonoscopies by seven colonoscopists, with and without their awareness
 - a. From pre- to post-awareness of videorecording, mean inspection time increased by 49% for all colonoscopies combined and increased significantly for four individual colonoscopists.
 - b. The overall quality of mucosal inspection technique improved by 31% after awareness of videorecording.
 - b. Cecal intubation photodocumentation (1c)
 - c. Double bite or single for colitis dysplasia biopsies
 - i. Surveillance for dysplasia
 1. The recommended protocol includes biopsies in all 4 quadrants from each 10 cm of the colon. This typically results in 28 to 32 biopsy samples as a minimum.
 2. Second bite may lead to inadequate pathology specimen, Can J Gastro 2007
 - a. 12 UC patients, 468 specimens, blinded pathologists
 - i. 14 inadequate double bites, 8 inadequate single bites
 - b. Use of multibite forceps for dysplasia monitoring?

- d. Impact on nurse experience and screening colonoscopy outcome Dellon, UNC 2008, 2009
 - i. Procedures with complications were associated with fewer weeks of nurse experience than were uncomplicated procedures (98 weeks vs. 157 weeks; $P=0.07$), and 13 of the complications (81%) occurred during procedures staffed by nurses hired during the study period. Eight of the complications (50%) occurred during procedures staffed by nurses with no more than six months of experience ($P=0.07$). Five of the complications (31%) occurred within the first two weeks of experience ($P<0.001$).
 - ii. Nursing experience also correlated with longer times for the endoscopist to reach the cecum, total procedure time and a lower rate of cecal intubation during screening colonoscopy. The mean time to reach the cecum for procedures involving nurses with no more than six months of experience was 12.7 minutes, compared with 10.4 minutes for nurses with more than six months of experience ($P<0.001$). For nurses with six months of experience or less, 18.1% of procedures had cecal intubation times greater than one standard deviation from the mean, compared with 12.2% of procedures for nurses with more than six months of experience ($P<0.001$). Similar results were seen for total procedure duration. For nurses with six months of experience or less, 9.3% of procedures did not reach the cecum, compared with 5.4% of procedures for nurses with more than 6 months of experience ($P<0.0001$).
 - iii. For nurses with 6 months of experience or less, any polyp was detected in 40.3% of procedures compared with 46.0% of procedures for nurses with more than 6 months of experience (OR 1.26, 95% CI: 1.09, 1.46). Similar results were seen for multiple polyps (OR 1.54, 95% CI: 1.29, 1.84) and hyperplastic polyps (OR 1.47, 95% CI 1.22, 1.76) but not for adenomas (OR 1.10 95% CI: 0.93, 1.30) or advanced lesions (OR 0.99, 95% CI: 0.71, 1.36).
4. Post-procedure factors in quality colonoscopy
 - a. Complications
 - i. Perforation, postpolypectomy bleeding
 - b. Recall system
 - i. Correct intervals per guidelines
5. Create a unit plan to ensure quality colonoscopy delivery
 - a. Measurement of physician or unit polyp detection rates
 - i. Encouragement 6 minute withdrawal times
 - b. ASGE Endoscopy Unit Recognition
 - i. www.asge.org/ITTIndex.aspx?id=6254



Virginia gastroenterologist Patricia L. Raymond M.D. speaks for hospital systems and medical conventions. Through her company Rx For Sanity (www.RxForSanity.com), she humorously leads nurses and physicians to regain their passion for healthcare. Her books, *Don't Jettison Medicine: Resuscitate Your Passion For the Career You Loved!*, *Colonoscopy: It'll Crack u Up* and *Colonoscopy Is A Gas* are available at Amazon.com or RxForSanity.com, with fun tshirts mugs, and mousepads at Zazzle.com at the SanityZaz Store. Join your colleagues & sign up for your complimentary subscription to the re-invigorating monthly e-newsletter *Passionate HealthCare*. PHC is bursting with medical humor and practical tactics to enhance your joy in nursing.

Dr. Raymond is now working on Your Health Choice Radio (www.YourHealthChoice.net), where we make the healthy choice the easy choice.

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Y QI? : It's time for your endo suite to choose to measure up (from EndoNurse Magazine)

"...and all the children are above-average." ~Garrison Keilor

Ain't hospital gossip fun?

The scuttlebutt is that one of our surgeons cornered the head of our endoscopy committee in the doctor's lounge to vent his spleen about the new QI standards in our tiny endoscopy suite. He'd just gotten THE MEMO. We gastros had such hubris! Could we possibly be implying that (specifically) his endoscopic technique was lacking?

Far from being yet another crazy standard imposed by those JCAHO-nistas and JCAHO-nostras (as my bud Patricia Stoeckley might say from an undisclosed safe house in an unnamed large healthcare system in Ohio), it's time endoscopy set its own standards.

Oh, except as applies to me, of course. I don't need to hassle with these QI standards. I know I can scope rings around my surgical colleagues, and a not a few of my gastro ones. At least that's what those voices in my head tell me.

I believe that I am a good endoscopist. But belief does not necessarily make it truth.

Kaffee: I want the truth!

Col. Jessep: [shouts] You can't handle the truth!

From A Few Good Men, 1992

Can your gastros handle the truth about their endoscopic skills? Be honest now. We hear you guys chat about Dr. X and his consistently distant views of the cecal cap. Not even in the same zip code. Dr. X is unfortunately not the only endoscopist claiming bionic eyes.

In fact, an article from the April 2006 American Journal of Gastroenterology¹ followed ten university hospital faculty gastroenterologists' cecal intubation rates over a six year period. Although overall intubation rate was surprising (seemed low to me) 90.3%, with improvement over the study period to 93.7%, one specific attending gastroenterologist only reached the cecum in only 63% of colonoscopies! Yeow. Did the attending notice? Does the staff? You may be sure that when they pulled this data together for the study, that completion rate was a big serving of humble pie for all.

"Stand in front of a room of board-certified gastroenterologists, and ask how many of them feel they perform high quality GI endoscopy. Everyone raises their hand," says Irving Pike MD FACG, of Gastrointestinal and Liver Specialists of Tidewater PLLC of Virginia Beach, and leader in promoting endoscopic quality controls in gastroenterology. "Then ask who would like to volunteer how they KNOW they perform high quality procedures, and no one steps forward. I never take "My mother says so" as an acceptable answer. Not being able to measure our quality led the ACG and ASGE in 2005 to appoint a quality indicator task force for GI endoscopic procedures. In an introduction to the 2006 publications that were written by this task force the two societies' presidents

explained, "The ASGE and ACG recognize that if we do not develop evidence-based quality measures, an administrative or governmental agency without experience or insight into the practice of endoscopy will define these measures for us."²

In other words, if you don't have the money for an attorney, one will be appointed for you. Darned if we do or if we don't. If you need to swallow a whole bucket of frogs, might as well swallow the biggest one first. Yes, we in gastro need to step up to the plate and be counted, weighed, and measured.

"Not everything that can be counted counts, and not everything that counts can be counted." ~ Albert Einstein

So, what counts that we have decided to count? Here is what we've chosen to start with in my endoscopy suite, via cut and paste from that so alarming memo:

☒ Cecal intubation rates – Cecal intubation is defined as passage of the colonoscope tip to a point proximal to the ileocecal valve so that the entire cecal caput, including the medial wall of the cecum between the ileocecal valve and appendiceal orifice, is visible. NEW: Photodocumentation of landmarks (appendiceal orifice or ileocecal valve or terminal ileum) must be documented in every procedure as well as notation of landmarks. Mandatory photo documentation will be effective January 1, 2009.

☒ Moderate Sedation - ASA class, Mallampati score, & reassessment immediately prior to the administration of moderate sedation.

☒ Appropriate antibiotic prophylaxis prior to PEG placement.

☒ Hand washing – hand washing or foaming is required before patient contact (sink in the room or w/ the foam as you enter the room) and after patient contact, before leaving the room. (once between patients is not acceptable)

☒ "Time out" prior to procedure – verification of patient, DOB, procedure - compared to consent. Everyone must verbally agree.

☒ Perforations/complications

☒ Scope withdrawal time from cecum - This is a future quality monitor what will be initiated as soon as the (computerized report) program is updated.

These QI measurements are far from shocking. But does QI monitoring really improve care, or just contribute to the chart tsunami?

"One thing I learned early in my business career is that anything of significance that is measured and watched, improves."

~ Bob Parsons, CEO of GoDaddy.com

I can attest that measurement improves performance, as when I'm 'tipped the wink' that the day is a handwashing monitor day, it feels as if my day is all about the foam. And I've already implemented measuring and documenting colonoscope withdrawal time (you did know that button #2 can be easily programmed as an onscreen timer, no?) ensuring that all my colon withdrawals are greater than six minutes. But does it matter?

I can't speak to my Macbethian hand washing, but the scope withdrawal time does matter. Our primary objective is to prevent or reduce colon cancer by detection and removal of polyps. A pivotal New England Journal of Medicine³ article in late 2006 directly correlated low polyp and cancer detection rates with withdrawal times under six minutes from cecum. No small deal here; detection of polyps, dysplasia or cancer dropped by over half if you chose 'Speed Racer' as your gastroenterologist.

"After development of quality measures for endoscopy, a pilot benchmarking group came together to compare their performance with each other" remarks Pike. "On talking to the participants, the physicians unanimously found that they were "slightly" less efficient, but much better endoscopists merely because they were measuring. Their focus has switched from getting the work done to getting it done well. It turns out that you are not scoring your work ---you are improving it."

Next up⁴ as a QI measurement? Perhaps following gastrodoc or endo unit specific polyp detection rates. In studies⁵, polyps are found in 23.9% to 35.7% of examinations, so on average at least a fourth of your colonoscopies should detect a polyp. Are you experiencing these rates in your suite? And which doc or suite would you choose for your own colonoscopy—the one with subpar detection rates? I think not.

Are all your endoscopists, as are the children in Lake Wobegon, above average?

Unlikely statistically speaking... but all can improve. The ASGE has established a course entitled the Endoscopic Unit Recognition program; the inaugural course was sold out in October 2008. Attendees learn skills to improve the safety and quality in their unit. Attending this course (includes a syllabus chock full of techniques, measures, benchmarking tools) is a big step in achieving an ASGE Recognition designation for your Hospital, AEC or Office-based Endoscopy unit. The program includes improving patient satisfaction, endoscopy-related infections, endoscope reprocessing, understanding quality metrics, designing and implementing a quality improvement program, training and credentialing, strategies for accreditation and re-accreditation, quality in sedation and monitoring, and more.

Support QI initiatives in your endoscopy suite. Don't merely get the work done—get it done well.

Associate yourself with men of good quality if you esteem your own reputation. It is better be alone than in bad company.

~ George Washington

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1. Evaluation on barium enema or other imaging study of an abnormality that is likely to be clinically significant, such as a filling defect or stricture
2. Evaluation of unexplained gastrointestinal bleeding
 1. Hematochezia
 2. Melena after an upper gastrointestinal source has been excluded
 3. Presence of fecal occult blood
3. Unexplained iron deficiency anemia
4. Screening and surveillance for colonic neoplasia
 1. Screening of asymptomatic, average-risk patients for colonic neoplasia
 2. Examination to evaluate the entire colon for synchronous cancer or neoplastic polyps in a patient with treatable cancer or neoplastic polyp
 3. Colonoscopy to remove synchronous neoplastic lesions at or around time of curative resection of cancer followed by colonoscopy at 3 years and 3-5 years thereafter to detect metachronous cancer
 4. After adequate clearance of neoplastic polyp(s) survey at 3- to 5-year intervals
 5. Patients with significant family history
 1. Hereditary nonpolyposis colorectal cancer: colonoscopy every 2 years beginning at the earlier of age 25 years or 5 years younger than the earliest age of diagnosis of colorectal cancer. Annual colonoscopy should begin at age 40 years.
 2. Sporadic colorectal cancer before age 60 years: colonoscopy every 5 years beginning at age 10 years earlier than the affected relative or every 3 years if adenoma is found
 6. In patients with ulcerative or Crohn's pancolitis 8 or more years' duration or left-sided colitis 15 or more years' duration every 1-2 years with systematic biopsies to detect dysplasia
5. Chronic inflammatory bowel disease of the colon if more precise diagnosis or determination of the extent of activity of disease will influence immediate management
6. Clinically significant diarrhea of unexplained origin
7. Intraoperative identification of a lesion not apparent at surgery (e.g., polypectomy site, location of a bleeding site)

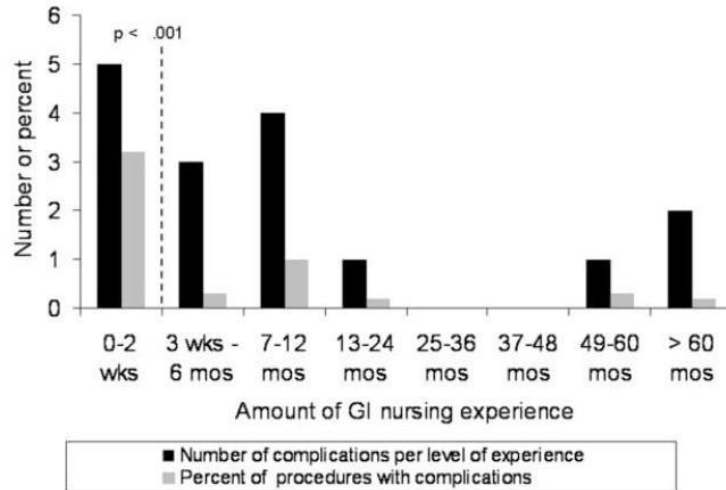
8. Treatment of bleeding from such lesions as vascular malformation, ulceration, neoplasia, and polypectomy site (e.g., electrocoagulation, heater probe, laser or injection therapy)
9. Foreign body removal
10. Excision of colonic polyp
11. Decompression of acute nontoxic megacolon or sigmoid volvulus
12. Balloon dilation of stenotic lesions (e.g., anastomotic strictures)
13. Palliative treatment of stenosing or bleeding neoplasms (e.g., laser, electrocoagulation, stenting)
14. Marking a neoplasm for localization

Indications for Colonoscopy and Appropriate Intervals*

Indication	Interval*
Bleeding	
Positive FOBT	NR
Hematochezia	NR
Iron deficiency anemia	NR
Melena with negative esophagogastroduodenoscopy	NR
Screening	
Average risk	10 y (begin at age 50 y)
Single FDR with cancer (or adenomas) at age \geq 60 y	10 y (begin at age 40 y)
\geq 2 FDRs with cancer (or adenomas) or 1 FDR diagnosed at age <60 y	5 y (begin at age 40 y or 10 y younger, whichever is earlier)
Prior endometrial or ovarian cancer diagnosed at age <50 y	5 y
HNPCC (begin age 20-25 y)	1-2 y
Abdominal pain, altered bowel habit#	
Positive sigmoidoscopy (large polyp or polyp of <1 cm shown to be an adenoma)^	
Postadenoma resection	
1-2 tubular adenomas of <1 cm	5-10 y
3-10 adenomas or adenoma with villous features, \geq 1 cm or with HGD	3 y
>10 adenomas	<3 y
Sessile adenoma of \geq 2 cm, removed piecemeal**	2-6 m
Postcancer resection	Clear colon, then 1 y, then 3 y, then 5 y
Ulcerative colitis, Crohn's colitis surveillance after 8 y of pancolitis or 15 y of left-sided colitis	2-3 y until 20 y after onset of symptoms, then 1 y

FOBT, Fecal occult blood test; NR, interval not recommended; FDR, first-degree relative; HNPCC, hereditary nonpolyposis colorectal cancer; HGD, high-grade dysplasia.

*From: Rex DK, Bond JH, Winawer S, et al. Quality in the technical performance of colonoscopy and the continuous quality improvement process for colonoscopy: recommendations of the U.S. Multi-Society Task Force on Colorectal Cancer. Am J Gastroenterol 2002;97:1296-308. Updated based on guideline revisions in press. Used with permission.



The effect of GI endoscopy nurse experience on screening colonoscopy outcomes. *Gastrointest Endosc.* 2009 August; 70(2): 331–343. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2753217/>

Multivariate analysis of nursing experience and screening colonoscopy outcomes*

	OR _{crude}	95% CI	OR _{adjusted} †	95% CI
Immediate procedural complication				
0-2 weeks experience / > 2 weeks experience	10.4	3.55, 30.2	10.5	2.26, 49.1
Time to cecum > 1 SD (18 minutes)				
0-6 months experience / > 6 months experience	1.60	1.30, 1.97	1.34	1.01, 1.78
Total procedure time > 1 SD (34 minutes)				
0-6 months experience / > 6 months experience	1.61	1.32, 1.97	1.54	1.18, 2.01
Cecal intubation rate, given that an attempt was made**				
0-6 months experience / > 6 months experience	1.81	1.37, 2.39	1.90	1.15, 3.15

*Multivariate analysis performed using logistic regression with an analysis of covariance strategy

†Adjusted for age, gender, bowel preparation, BMI, ASA score, presence of multiple comorbidities, multiple past abdominal surgeries, past hysterectomy, severe diverticulosis, and polypectomy

**Defined as reaching the cecum given adequate bowel preparation and the recto-sigmoid junction was passed

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